



Chime+Siren Manual

ISZW7-ECO

Product Overview

- Z-Wave Plus™ V2
- Can be triggered to play any one of 30 built-in sounds including Sirens and Chimes.
- SD-Card Slot for user customizable sounds
- 24-Hour Internal Backup Battery
- Loud 105dB capable speaker

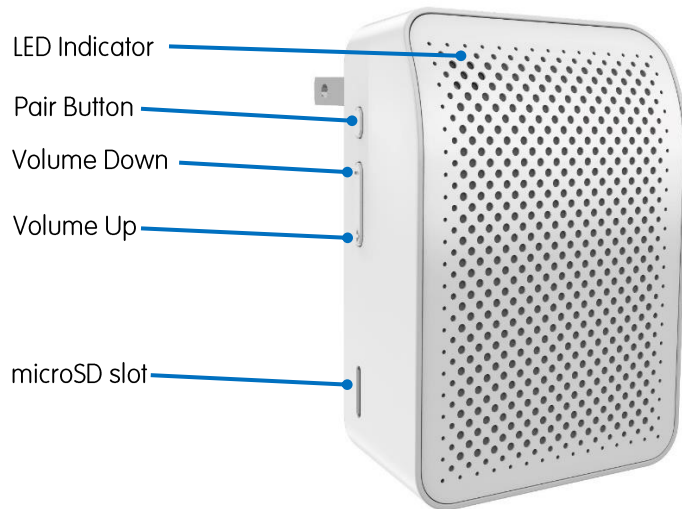
Product Specifications

- For indoor use only
- Operating frequency: 908.42, 916 MHz
- Operation range: Up to 600 feet (180 meters) line-of-sight
- Operating temperature: 0° – 49°C, 32° – 120°F (ambient temperature)
- Line Powered 120 VAC 60Hz, 0.25A Maximum US



Adding via SmartStart

To add via SmartStart, you will need the device's DSK code or QR-Code which is located on the back of the device, on the packaging, and on a leaflet within the packaging. Apply power to the device by inserting the device into a wall receptacle, and the device will go into SmartStart inclusion mode. While in this mode, the sensor can be added to a Z-Wave™ controller that supports SmartStart. Please refer to the inclusion controller's manual for activating SmartStart.





Adding to a Z-Wave™ Network (Classic Inclusion Method)

Make sure the device has power. Press the Pair Button which is the smaller of the two buttons, and the device will enter classic inclusion mode which implements both classic inclusion with a Node Information Frame, and Network Wide Inclusion. During Classic Inclusion mode, the Green LED will blink two times every three seconds. When Classic inclusion times-out, the device will blink red and green.

Led behavior for Inclusion	Blink Pattern
SmartStart Started	Green LED Three Times every three seconds
Classic Inclusion Started	Green LED Three Times every three seconds.
Classic Inclusion Timed-Out	Green and Red several times.
Inclusion Successful	Green LED on solid
Inclusion Not Successful	Red LED on solid
Removal Successful/Device Reset Locally	Red LED on solid

Removing a Sensor from a Z-Wave Network

To remove the device, place the controller into Remove or “Z-Wave Exclusion” mode. Press the smaller of the two buttons (Add/Test) following the same procedure to add for removal. Upon successful removal, the device’s red led will come on solid for 1 second. Note: Any Z-Wave Inclusion Controller can remove a Z-Wave device regardless of manufacturer or which network the device is currently added to.

Battery Backup

The device is equipped with a non-user serviceable lithium-ion 24-hour battery backup to keep the device alive and active in the Z-Wave network for up to 24-hours.

What is Z-Wave?

The Z-Wave protocol is an interoperable, wireless, RF-based communications technology designed specifically for control, monitoring and status reading applications in residential and light commercial environments. Mature, proven and broadly deployed (with over 35 million products sold worldwide), Z-Wave is by far the world market leader in wireless control, bringing affordable, reliable and easy-to-use 'smart' products to many millions of people in every aspect of daily life. Certified Z-Wave devices regardless of manufacturer can work together to form a Z-Wave mesh network. Always on Z-Wave devices can act as repeaters in the mesh increasing range and redundancy.



For a more complete look at Z-Wave technology for non-technologists, and to learn more about Z-Wave's role as a key enabling technology for the Internet of Things and connected objects, please visit www.z-wave.com.

Z-Wave Device Class and Command Class Information

This Z-Wave sensor is a Z-Wave generic Device Class of GENERIC_TYPE_AV_CONTROL_POINT (0x03), and a specific device class of SPECIFIC_TYPE_SOUND_SWITCH (0x01).

Manufacturer Specific

Manufacturer ID: 014A

Product Type: 0x0007

Product ID: 0x3975

Factory Default

Please use this procedure only when the network primary controller is missing or otherwise inoperable.

To restore the device back to factory settings and remove it from any Z-Wave network. Hold the Pair button for 10 seconds. During the 10 seconds of continuing to hold the Add/Test button the green LED will flash, and after 10 seconds the red LED will come on solid for 1 second indicating that the factory default of the device has been successful, and the device is ready to add back into a Z-Wave network.

Association

This sensor has one Association group (Lifeline) with only one node for that group. Group one is a lifeline group who will receive unsolicited messages relating to AC and Battery power notifications, and Device Reset Locally notifications.

Network Wide Inclusion

This sensor also supports Network Wide Inclusion such that the Sensor can be included into the Z-Wave network over the mesh network and not directly near the main controller. This mode is automatically activated after regular inclusion was not successful.



Mapping of the Basic Command Class

The Chime+Siren has the Basic Command Class mapped to the Sound Switch Command Class such that a Basic Set of 0x00 is always off. A Basic set of 1 is sound 1; 2 is sound 2, 5 is sound 5, etc. Finally, a Basic Set of 0xFF is mapped to the default sound.

Z-Wave Command Classes

<i>Command Class Name</i>	<i>Version</i>	<i>Comments</i>	<i>Encapsulated Supervision When included with S2 and Enabled in Configuration</i>
<i>Association</i>	2		
<i>Association Group Information</i>	3		
<i>Device Reset Locally</i>	1	Device will factory reset when button us held as a user inserts siren into AC power then held for 10 seconds.	
<i>Battery</i>	2	Can be configured to send automatic battery reports on a timer via Configuration CC.	✓
<i>Firmware Update Meta Data</i>	5	2 targets: the Z-Wave module, and the STM32.	
<i>Indicator</i>	3		
<i>Manufacturer Specific</i>	2		
<i>Multi Channel Association</i>	3		



<i>Powerlevel</i>	1		
<i>Security 2</i>	1	Support Authenticated & Unauthenticated	
<i>Supervision</i>	1		
<i>Transport Service</i>	2		
<i>Version</i>	3		
<i>Z-Wave Plus Info</i>	2		
<i>Basic</i>	2	Basic Set of 0 to 255 maps to 0: off, and 1-255 enumerated sounds where 255 is a Siren sound. Any Report sent from the Siren is mapped 0: off and 255: Sound playing.	
<i>Notification</i>	8		✓
<i>Configuration</i>	4		
<i>Sound Switch</i>	1		



Configuration Command Class

Parameter	Name	Description	Default	Min	Max	Bytes	Advanced
1	Default Sound	Map Basic Set of 0xFF to play the sound number set here. e.g. a 1 is Siren and a 5 is a Chime.	5	1	100	1	
2	Heartbeat Notification Timing	Seconds between automatic battery reports.	3600	120	86400	4	✓
3	Supervision Encapsulation	Encapsulate Unsolicited Notifications in Supervision Get requests. 0: Disabled 1: Enabled	1	0	1	1	✓
4	Sound Volume	Sound volume as a percentage for non-emergency sounds (See Configuration Parameter #6). 1 to 100, whereas 0 is Mute, and 255 is Restore last volume before Mute.	50	0	255	1	
5	Sounds Available	Number of sounds available to play.	100	0	100	1	
6	Emergency Sound Volume Adjustable	Enable Intrusion/Smoke/CO siren volume adjustable and mutable. 0 is Disabled (default). 1 is Enabled.	0	0	1	1	✓

Notification Types

The Chime+Siren Implements two notification types for Power Management and System level notifications which are sent unsolicited to the Lifeline Association Group 1.

	Event Value	Event Description
Power Management (0x08)	0x02	AC Mains Disconnected
	0x03	AC Mains Re-Connected
	0x0C	Battery Is Charging
	0x0D	Battery Is Fully Charged
	0x0E	Charge Battery Soon
	0x0F	Charge Battery Now



System (0x09)	0x04	0x5501 Watchdog Reset on the Z-Wave Module
		0x5502 Watchdog Reset on the STM32

Sounds

There are 30 included sounds within the Chime+Siren, and the device can play sounds from the SD card either overriding the build-in sounds or adding to them.

Sounds are played with the Sound Switch Command Class, the Basic Command Class, and optionally with the Indicator Command Class. Volume is controlled with the buttons, the Configuration Command Class, and the Sound Switch Command Class.

When a sound is played with the Basic Command Class and Indicator Command Class, then it plays at the current configured volume level. The primary and recommend method for playing sounds is via the Sound Switch Command Class which can also be used to retrieve the name of a particular sound.

Sound Number	Name	Description	Emergency Sound Plays at Max Volume (Disabled Via Configuration CC)
1	Alarm Siren 1	Alarm Siren for Security System	✓
2	Exit Delay	Exit Delay Sound for a Security System for when arming to Away.	
3	Entry Delay	Entry Delay Sound for when Security System is going to Alarm after a period of time that panel needs to be disarmed.	
4	Chime 1		
5	Chime 2	2 beeps	
6	Smoke Alarm	Smoke Alarm UL 3 Beeps Pattern Followed by Voice Prompt	✓
7	Carbon Monoxide Alarm	CO Alarm UL 4 Beeps Pattern Followed by Voice Prompt	✓



8	Error Notification	Error beep for panels to indicate a problem.	
9	Armed Away (Female Voice)	For Security Systems when they are armed to Away	
10	Armed Stay (Female Voice)	For Security Systems when they are armed to Stay	
11	Disarmed (Female Voice)	For Security Systems when they are disarmed	
12	Armed Away (Male Voice)	For Security Systems when they are armed to Away	
13	Armed Stay (Male Voice)	For Security Systems when they are armed to Stay	
14	Disarmed (Male Voice)	For Security Systems when they are disarmed	
15	Alarm Siren 2		✓
16	Alarm Siren 3		✓
17	Chime -3	E1	
18	Chime -4	Tinker	
19	Chime -5	Lemon Piano	
20	Chime -6	Lemon Strings	
21	Chime -7	Lemon Marimba	
22	Chime -8	Waterdew	
23	Doorbell-1	Doorbell Traditional	
24	Doorbell-2	Doorbell Traditional Piano	
25	Doorbell-3	Doorbell Traditional Marimba	
26	Doorbell-4	Westminster Piano	
27	Doorbell-5	Garden Piano	
28	Doorbell-6	Garden Marimba	
29	Doorbell-7	Garden Strings	
30	Doorbell-8	Happy Gnomes Piano	

Manually Adjusting the Volume

The volume buttons on the side of the device can override the volume. Press the volume + to make the volume louder and – to make it quieter. Emergency sounds like the siren will still play at full volume regardless of the current volume setting, but this feature can be disabled via the Configuration CC such that all sounds regardless of being an Alarm sound will play at the same volume and be mutable.





SD-Card

All of the internal sounds can be changed via the MicroSD card. The Micro SD-Card must be formatted a FAT16 filesystem, and the sound files on the Micro SD-Card may start with a decimal number which will override the built-in sound. For example, if you would like to override the internal sound 16 “Alarm Siren 2” with your own sound file, you would rename the .wav file to start with a 16, so the file name could be “16 Red Alert.wav”, then your custom sound would be played instead of the internal sound. If you remove the SD-Card, then the sound would return to the internal default sound.

Supported Sound Files

File Extension	.wav
Channels	1 - Mono
Sample Rate	8 kHz
Sample	16-bit PCM

Indicator Command Class

The indicator command class can control the LED, and the sounds via Indicator V1 Set, or Indicator V2+ Set.

Indicator V1 Set Mapping:

Indicator 0 Value (HEX)	Sound	LED
0x00	OFF	OFF
0x01	Armed Stay (Female Voice)	RED
0x11	OFF	RED
0x21	Armed Stay (Female Voice)	OFF
0x02	Armed Away (Female Voice)	RED
0x12	OFF	RED
0x22	Armed Away (Female Voice)	OFF
0x03	Disarmed (Female Voice)	GREEN
0x13	OFF	GREEN
0x23	Disarmed (Female Voice)	OFF
0x04	Alarm Siren 1	RED Blinking (500ms)
0x14	Smoke Alarm	RED Blinking (500ms)
0x24	Carbon Monoxide Alarm	RED Blinking (500ms)



0x34	OFF	RED Blinking (500ms)
0x44	Alarm Siren 1	GREEN Blinking (500ms)
0x54	OFF	GREEN Blinking (500ms)
0x06	Entry Delay On	RED Blinking (200ms)
0x16	Entry Delay For 15 Seconds	
0x26	Entry Delay For 30 Seconds	
0x36	Entry Delay For 45 Seconds	
0xF6	Entry Delay For 255 Seconds	
0x07	Exit Delay On	
0x17	Exit Delay For 15 Seconds	
0x27	Exit Delay For 30 Seconds	
0x37	Exit Delay For 45 Seconds	
0xF7	Exit Delay For 255 Seconds	
0x0F	Chime 1	Blue Blinking (200ms)
0x1F	Chime 2	
0x2F	Doorbell 7 Garden Strings	
0x3F	Doorbell 1 Traditional	
0x4F	Doorbell 4 Westminster	
0x5F	Error Notification	OFF

Indicator V2+ Set Mapping:

The indicator v2+ Set can use the Identify ID (0x50) to identify a unit, and the following Indicator IDs are mapped to sounds:

Supported Indicator Types

Indicator ID	Value	Sound Mapped To
Armed	0x01	Chime 1
Disarmed	0x02	Disarmed (Female Voice)
Armed Stay	0x0A	Armed Stay (Female Voice)
Armed Away	0x0B	Armed Away (Female Voice)
Alarm	0x0C	Alarm Siren 1
Alarm Burglar	0x0D	Alarm Siren 2
Smoke	0x0E	Smoke Alarm
CO	0x0F	Carbon Monoxide Alarm



Entry Delay	0x11	Entry Delay
Exit Delay	0x12	Exit Delay

The indicators above support the Binary and Sound Level properties.

S2 Encryption

The device uses industry standard elliptic key cryptography to encrypt all sensitive communications. The DSK code on the device in the QR code and printed below it is used for authenticating the encrypted command classes in the table above. A Security Enabled Z-Wave Controller must be used in order to fully utilize the product.

Shipping Mode

The Chime+Siren will disconnect its own back-up battery for shipping mode in two ways. First, if the device has not been included into a Z-Wave network, shipping mode will activate after 5 minutes of being unplugged from the wall. Second, it's possible to manually activate Shipping Mode if the device is not included into a Z-Wave network, is not in Classic Inclusion mode, and is unplugged from the wall, by holding both the Volume Up and Volume Down buttons simultaneously. Then device's LED will blink yellow rapidly for one second and then disconnect its own back-up battery turning off.



FCC Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment to an outlet on a different circuit from the receiver
- Consult the dealer or an experienced radio/TV contractor for help.

Warning: Changes or modifications not expressly approved by Ecolink Intelligent Technology Inc. could void the user's authority to operate the equipment.

This device complies with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

C'et appareil est conforme la norme d'Industrie Canada exempts de licence RSS. Son fonctionnement est soumis aux deux conditions suivantes: (1) c'et appareil ne peut pas provoquer d'interférences, et (2) c'et appareil doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement de la dispositif.

FCC ID: XQC-ISZW7ECO IC: 9863B-ISZW7ECO

Limited Warranty

This limited warranty is provided by Ecolink Intelligent Technology ("Ecolink") to you as the original purchaser of the product. Ecolink warrants this product to be free from defects in material and workmanship for a period of one (1) year from the date of original purchase. The determination of whether the product is defective shall be made by Ecolink in its sole discretion with consideration given to the overall performance of the product. If Ecolink determines that any product is defective, Ecolink's sole obligation and your sole and exclusive remedy shall be that Ecolink will replace the product.

This warranty does not apply to damage caused by shipping or handling, or damage caused by accident, abuse, misuse, misapplication, ordinary wear, improper maintenance, failure to follow instructions or as a result of any unauthorized modifications. The foregoing limited warranty is and shall be in lieu of any and all other warranties, whether expressed or implied and of all other obligations or liabilities on the part of Ecolink. Ecolink neither assumes responsibility for, nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product. It is recommended that the customer check their equipment on a regular basis for proper operation. **2012/19/EU (WEEE directive):** Products marked with this symbol should not be mixed with general household waste. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.

Designed in Carlsbad, CA www.discoverecolink.com